CLAIM LISTING

1. (Original) A method, comprising:

irradiating a person at least partially covered with clothing;

detecting electromagnetic radiation within a frequency range of about 200 MHz to about 1 THz reflected from a surface beneath the clothing in response to said irradiating;

establishing data representative of an image of the person from the electromagnetic radiation;

determining a number of data sets from the data, the data sets each corresponding to a spatial frequency representation of a different portion of the image; and

adaptively processing each of the data sets to identify a man-made object being carried by the person beneath the clothing.

2. (Original) The method of claim 1, wherein said determining includes performing a Fourier transform operation for each of a number of different portions of the data to provide a corresponding number of complex spatial frequency data representations.

3. (Original) The method of claim 2, wherein said determining further includes applying an image feature extraction filter to each of the complex spatial frequency data representations to correspondingly provide the data sets.

4. (Original) The method of claim 3, wherein said extracting is performed with at least one of a radially invariant and an angular invariant filter.

5. (Original) The method of claim 1, wherein said adaptively processing is performed with a neural network.

6. (Original) The method of claim 1, wherein the man-made object is at least one of a weapon and contraband.

7. (Original) The method of claim 1, which includes displaying an image of at least a portion of the man-made object.

8. (Currently amended) A method, comprising:

establishing data corresponding to an image of a concealed surface by irradiating with electromagnetic radiation including one or more frequencies in a range of about 200 MHz to about 1 THz;

generating a data set corresponding to a spatial frequency representation of at least a portion of the image from the data; and

identifying a concealed man-made object by analyzing the data set with a neural network.

9. (Original) The method of claim 8, which includes displaying an image of at least a portion of the man-made object.

10. (Original) The method of claim 8, wherein said establishing is performed by scanning a person in a portal at a security checkpoint with the electromagnetic radiation.

11. (Original) The method of claim 8, wherein said generating includes performing a Fourier transform operation and extracting the data set from results of the Fourier transform operation.

12. (Original) The method of claim 8, wherein the range is about 5 GHz to about 110 GHz.

13. (Original) The method of claim 8, wherein the concealed man-made object is being carried by a person beneath clothing during said establishing and the man-made object is at least one of a weapon and contraband.

14. (Original) The method of claim 8, which includes generating a number of overlapping image frames and wherein said identifying further includes comparing information between two or more of the frames.

15. (Original) A method, comprising:

irradiating a person at least partially covered with clothing;

detecting electromagnetic radiation reflected from a surface beneath the clothing in response to said irradiating;

establishing data corresponding to a spatial frequency representation of the surface from the electromagnetic radiation; and

analyzing the data with a neural network to identify a man-made object being carried by the person beneath the clothing.

16. (Original) The method of claim 15, which includes determining a data set corresponding to an image of the surface from the electromagnetic radiation.

17. (Original) The method of claim 16, wherein said establishing includes:

determining a number of image portions from the data set;

performing a Fourier transform operation for each of the image portions to provide a corresponding number of spatial frequency image portion representations; and

applying a feature extraction filter to each of the spatial frequency image portion representations.

18. (Original) The method of claim 17, wherein the data corresponds to the output of the feature extraction filter for one or more of the spatial frequency image portion representations.

19. (Original) The method of claim 15, which includes displaying an image including the man-made object.

20. (Original) The method of claim 15, wherein the electromagnetic radiation includes one or more frequencies is a range of about 200 MHz through about 1 THz and the man-made object is at least one of a weapon and contraband.

21. (Original) A method, comprising:

irradiating a person at least partially covered by clothing with electromagnetic radiation including one or more frequencies in a range of 200 MHz to about 1 THz;

in response to said irradiating, establishing data representative of an image corresponding to appearance of one or more private body parts under the clothing;

determining a number of data sets each corresponding to a respective one of a number of different image portions;

numerically processing the data sets relative to one or more criteria to evaluate if one or more of the different image portions reveals a man-made object beneath the clothing; and

if the one or more criteria are satisfied, displaying an image of the man-made object relative to a location on the person.

22. (Original) The method of claim 21, which includes inhibiting said displaying if the one or more criteria are not satisfied.

23. (Original) The method of claim 21, wherein said displaying includes showing the person with a gender-neutral representation.

24. (Original) The method of claim 21, wherein the man-made object is at least one of a weapon and contraband.

25. (Original) The method of claim 21, wherein the data sets each correspond to a spatial frequency representation of the respective one of the different image portions.

26. (Original) The method of claim 25, wherein said numerically processing includes:

performing a Fourier transform to provide spatial frequency data for each of the different image portions;

applying an image feature extraction filter to the spatial frequency data for each of the different image portions to provide a corresponding one of the data sets; and

analyzing each of the data sets with a neural network, the one or more criteria including neural network weight values.

27. (Original) A system, comprising:

an array operable to interrogate a person with electromagnetic radiation at one or more frequencies in a range of about 200 MHz to about 1 THz; and

one or more processors operable to establish data corresponding to an image of a surface beneath clothing of the person from one or more input signals from the array and generate a number of data sets each corresponding to a spatial frequency representation of a different portion of the image from the data, the one or more processors being further operable to analyze the data sets with a neural network to detect if the person is carrying a man-made object concealed by the clothing.

28. (Original) The system of claim 27, further comprising a display device responsive to said one or more processors to provide at least one image corresponding to the man-made object if the man-made object is detected.

Claim 29. (Canceled).

30. (Original) The system of claim 27, further comprising a platform proximate to said array to support the person and a motor to move at least one of the array and the platform relative to another of the array and the platform to perform a security scan of the person at a security checkpoint.

31. (Original) The system of claim 27, wherein the processor is further operable to generate image data corresponding to a number of cylindrical images of the person.

32. (Original) The system of claim 27, further comprising:

means for processing portions of the data corresponding to portions of the image;

means for transforming the portions of the data to corresponding sets of spatial frequency image representation data; and

means for extracting features from the sets of spatial frequency image representation data for analysis by the neural network, the data sets representing one or more features provided by said extracting means.

33. (Original) The system of claim 27, wherein the array is operable to provide the electromagnetic radiation at a plurality of different frequencies spanning at least a 10 GHz band.

34. (Original) An apparatus, comprising: a device carrying logic executable by one or more processors to analyze data corresponding to an image of a person obtained from electromagnetic radiation including one or more frequencies in a range of about 200 MHz to about 1 THz, the logic being further operable to generate a number of data sets each corresponding to a spatial

frequency representation of a respective one of a number of different portions of the image, adaptively process each of the data sets relative to one or more criteria to determine if one or more of the different portions of the image show a man-made object concealed by clothing of the person, and provide one or more output signals to display at least a portion of the man-made object relative to a location on the person if the one or more criteria are satisfied.

35. (Original) The apparatus of claim 34, wherein the device is in the form of a processor-readable memory and the logic is in the form of a number of instructions stored in the memory.

36. (Original) The apparatus of claim 34, wherein the device includes one or more parts of a computer network and the logic is encoded in one or more signals for transmission over the computer network.

37. (Original) The apparatus of claim 34, wherein the logic is further operable to perform a Fourier transform operation with different portions of the data to correspondingly provide a number of sets of spatial frequency data.

38. (Original) The apparatus of claim 37, wherein the logic is further operable to apply an image feature filter to each of the sets of spatial frequency data to correspondingly provide the data sets.

39. (Original) The apparatus of claim 34, further comprising a display device responsive to the one or more output signals to provide an image of the man-made object at the location on a gender-neutral representation of the person.

40. (Original) The apparatus of claim 34, wherein the logic defines a neural network to adaptively process the data sets.